What is claimed is:

1. A robot system having an image processing function for determining posture, or posture and position of a robot operation on an object comprising:

a robot;

a first image capturing device;

a memory storing reference models created based on image data of a reference object captured by said image capturing device in a plurality of different directions, and storing information of the capturing directions to be respectively associated with said reference models, and information of orientation of the robot operation with respect to the object, said reference object being the object of detection or an object having a shape identical to that of the object of detection; and

a processor to perform matching processing on image data containing an image of the object of detection captured by said image capturing device with said reference models to select an image of an object matched with one of said reference models, and to determine orientation, or orientation and position of an operation to be performed by the robot based on the selected image of the object, said one reference model and the information of the capturing direction and the information of the orientation of the robot operation with respect to the object associated with said one reference model.

2. A robot system having an image processing function according to claim 1, wherein said reference models are obtained form a part of the image data of the reference object.

3. A robot system having an image processing function according to claim 1, wherein said reference models are obtained by processing the image data of the reference object.

4. A robot system having an image processing function according to claim 1, wherein said first image capturing device comprises a camera for capturing two-dimensional image data.

5. A robot system having an image processing function according to claim 4, wherein said image data of the reference object are captured by said camera from a predetermined distance.

6. A robot system having an image processing function according to claim 1, wherein said robot system further comprises a second image capturing device and

said robot situates said second image data capturing device to have said determined orientation or to have said determined orientation and said determined position with respect to the object, and

said processor processes second image data captured by said second image capturing device to detect position and/or posture of the object with respect to said second image data capturing device

7. A robot system having an image processing function according to claim 1, wherein said robot system further comprises a second image capturing device for obtaining three-dimensional position; and

said robot situates said second image data capturing device to have

said determined orientation or to have said determined orientation and said determined position with respect to the object, so that said second image data capturing device is directed to a characterizing portion of the object;

said processor detects three-dimensional position and/or posture of the object based on three-dimensional position of said characterizing portion obtained by said second image capturing device.

8. A robot system having an image processing function according to ~~claim 6 or 7~~ claim 1, wherein said first image data capturing device is used as said second image data capturing device.

9. A robot system having an image processing function according to ~~claim 6 or 7~~ claim 1, wherein said second image capturing device comprises a three-dimensional visual sensor of spot-light scanning type capable of measuring distance between the sensor and an object.

10. A robot system having an image processing function according to ~~claim 6 or 7~~ claim 1, wherein said second image data capturing device comprises a structured-light unit for irradiating a structured light on an object and capturing an image of the object including the irradiated light on the object.

11. A robot system having an image processing function according to claim 7, wherein said robot operation is an operation of picking up at least one object form a plurality of objects overlapped with each other.

12. A robot system having an image processing function for

determining posture, or posture and position of a robot operation on an object comprising:

a robot;

a first image capturing device;

a memory storing reference models created based on image data of different kinds of reference objects captured by said first image capturing device, and storing information of the kinds respectively associated with said reference models, and information of orientation of the robot operation with respect to the object of each kind, each of said reference objects being the object of operation of each kind or an object having a shape identical to that of the object of operation of each kind; and

a processor to perform matching processing on image data containing an image of the object of operation captured by said first image capturing device with said reference models to select an image of an object matched with one of said reference models, and to determine orientation, or orientation and position of the robot operation based on the selected image of the object, said one reference model, the information of the kind associated with said one reference model and the information of the orientation of the robot operation respect to the object associated with said one reference model.

13. A robot system having an image processing function according to claim 12, wherein said reference models are obtained form a part of the image data of the reference object.

14. A robot system having an image processing function according to claim 12, wherein said reference models are obtained by processing the image

data of the reference object.

15. A robot system having an image processing function according to claim 12, wherein said first image capturing device comprises a camera for capturing two-dimensional image data.

16. A robot system having an image processing function according to claim 15, wherein said image data of the reference object are captured by said camera from a predetermined distance.

17. A robot system having an image processing function according to claim 12, wherein said robot system further comprises a second image capturing device,

said robot situates said second image data capturing device to have said determined orientation or to have said determined orientation and said determined position with respect to the object, and

said processor processes second image data captured by said second image capturing device to detect position and/or posture of the object with respect to said second image data capturing device

18. A robot system having an image processing function according to claim 12, wherein said robot system further comprises a second image capturing device for obtaining three-dimensional position; and

said robot situates said second image data capturing device to have said determined orientation or to have said determined orientation and said determined position with respect to the object, so that said second image data

capturing device is directed to a characterizing portion of the object;

said processor detects three-dimensional position and/or posture of the object based on three-dimensional position of said characterizing portion obtained by said second image capturing device.

19. A robot system having an image processing function according to ~~claim 17 or 18~~ claim 12, wherein said first image data capturing device is used as said second image data capturing device.

20. A robot system having an image processing function according to ~~claim 17 or 18~~ claim 12, wherein said second image capturing device comprises a three-dimensional visual sensor of spot-light scanning type capable of measuring distance between the sensor and an object.

21. A robot system having an image processing function according to ~~claim 17 or 18~~ claim 12, wherein said second image data capturing device comprises a structured-light unit for irradiating a structured light on an object and capturing an image of the object including the irradiated light on the object.

22. A robot system having an image processing function according to claim 18, wherein said robot operation is an operation of picking up at least one object form a plurality of objects overlapped with each other.